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A retrospective occurrence of clinical and laboratory leishmaniasis in humans from Jan 2016 to Jan 2021 in Baringo County, Kenya

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ONE HEALTH RELEVANCE

One health approach recognizes that the health of the people is interconnected to the health of animals and one shared environment. Moreover, change in environmental conditions and habitats creates new opportunities for the transmission of zoonotic diseases. Leishmaniasis is endemic in arid and semi-arid regions of Kenya that includes Baringo county. This study aims at producing results that are expected to inform policy decisions, formulate strategies that will enhance public education involving the community and other stakeholders which will elicit in synergized surveillance and improve reporting to the hospital and also, in understanding the impact of climate in the distribution of leishmaniases

BACKGROUND

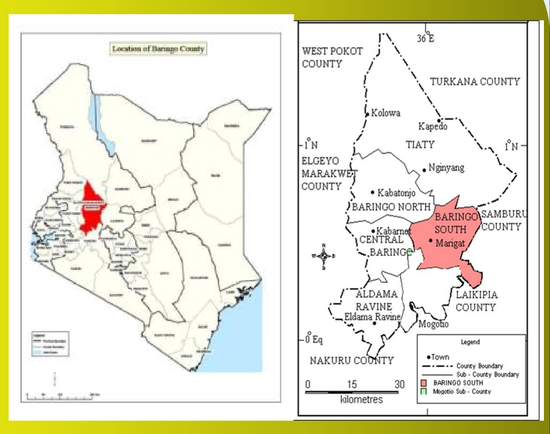
- Visceral Leishmaniasis(VL) -protozoa of genus *Leishmania*
- Transmission is through bites by infected female sand flies of the genera *Phlebotomus, psycodopygus* and *Lutzomyia*
- Animal reservoirs include rodents, hyraxes and wild canids
- Manifests as Cutaneous (CL), Mucocutaneous(MCL) and Visceral leishmaniasis(VL) and Post Kala-azar Dermal Leishmaniasis (PKDL) (WHO, 2017)
- The VL (Kala-azar) form being the most severe
- Dogs; the disease is caused by *Leishmania infantum*

PROBLEM STATEMENT

- Globally, 350 million people are at infection with an estimated two million new cases occurring annually (WHO, 2017)
- Disease occurs in 98 countries,endemic in Africa, Asia and South Europe (WHO, 2017)
- Endemic in arid and semi-arid regions (Ngure P., et al)
- Kala-azar common name used by the community, is a major public health problem in Marigat, Baringo sub county (Robert L., et al)
- To provide evidence to support proactive measures to prevent and control VL

METHODS

This hospital-based retrospective study was conducted between 2016 and 2021 at Kimalel Health Centre, Baringo County. Data from patients diagnosed and treated at the centre during the period was analyzed for variables such as: Age, sex, date, residence and method of diagnosis



OBJECTIVES

Overall objective

The study of the occurrence of visceral lesishmaniasis in human cases from Jan 2016 to Jan 2021 at Kimalel Health Centre, Baringo South Sub County, Baringo County, Kenya

Specific objectives

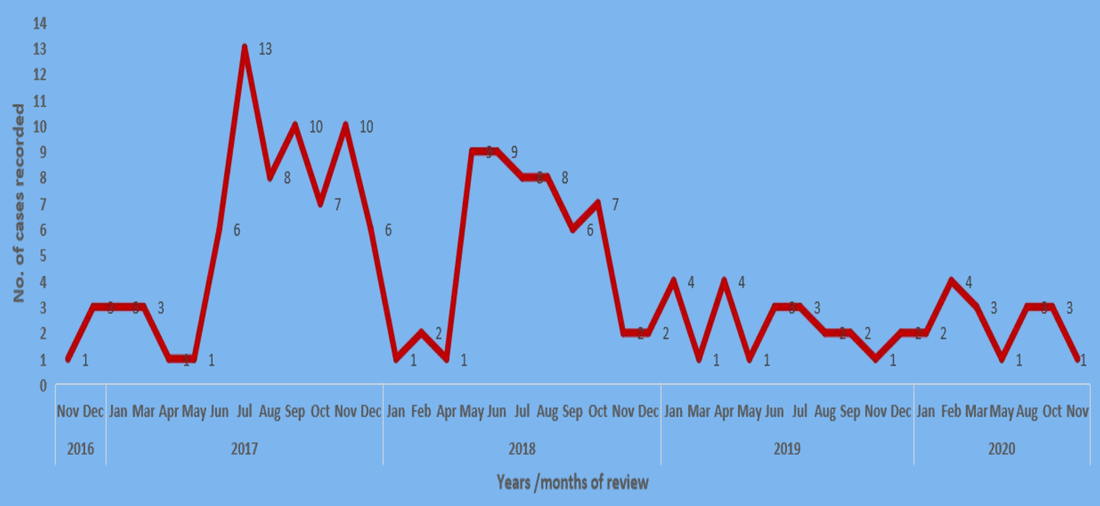
- To determine the occurrence of leishmaniasis in patients in Kimalel Health Centre, Baringo South Sub County, Baringo County
- To describe the epidemiological patterns of visceral Leishmaniasis in Baringo County

RESULTS

Demographic characteristics of patients diagnosed for visceral leishmaniasis based on review of records from Kimalel health centre, Baringo County, 2016–2020 (N = 167)

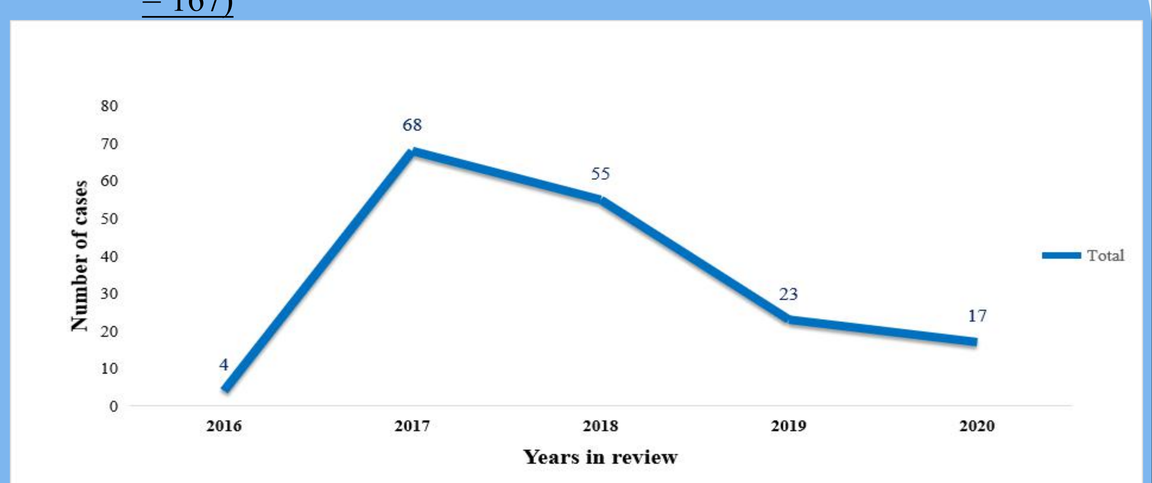
Age by age group	Female	%	Male	%	Total	Total %
<5 years	8	(4.8)	9	(5.4)	17	(10.2)
5-15 years	19	(11.4)	58	(34.7)	77	(46.1)
15-25 years	7	(4.2)	27	(16.2)	34	(20.4)
25-35 years	6	(3.6)	13	(7.8)	19	(11.4)
35-45 years	4	(2.4)	4	(2.4)	8	(4.8)
45-55 years	4	(2.4)	3	(1.8)	7	(4.2)
55-65 years	0	(0.0)	3	(1.8)	3	(1.8)
65-75 years	0	(0.0)	2	(1.2)	2	(1.2)
Total	**48**	**(28.74)**	**119**	**(71.26)**	**167**	**(100.00)**

Trends of patients diagnosed for visceral leishmaniasis at Kimalel Health Centre between January 2016 and January 2021 (N = 167)



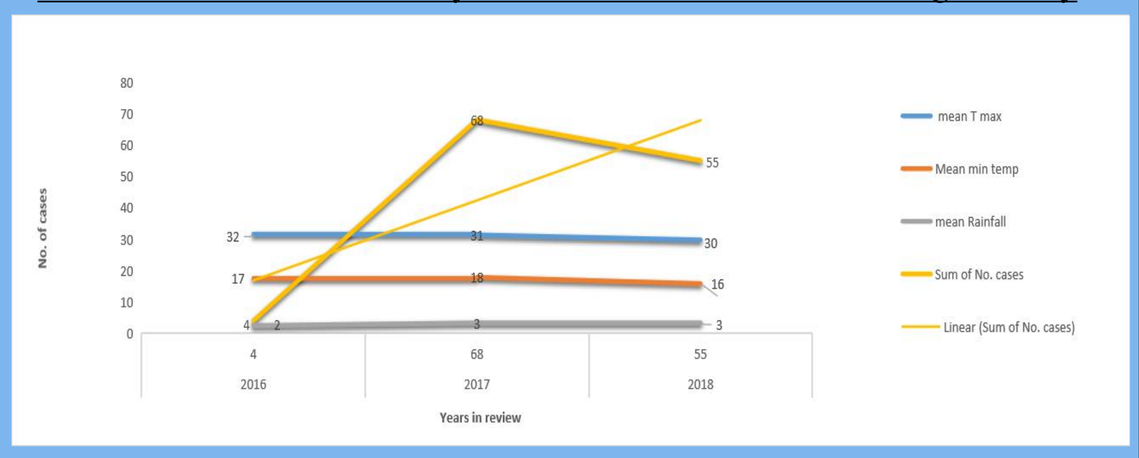
Between January 2016 and January 2021 cases of visceral leishmaniasis were recorded continuously with peaks in the months of July in 2017 and May and June in 2018

Trends of patients diagnosed for visceral leishmaniasis per year at Kimalel Health Centre between January 2016 and January 2021 (N = 167)



- Between January 2016 and January 2021 cases of visceral leishmaniasis were recorded continuously with peaks in the months of July in 2017 and May and June in 2018

Analysis of rainfall, minimum and maximum temperature versus the number of cases recorded from January 2016 to December 2018 in Baringo County



- As climatic temperatures increases, it accelerates maturation of the leishmanian parasites, and also increases the risk of infection (P. Desjeux.,et al 2012)
- However, when the conditions are too hot and dry, vector survival rate decreases and the disease may disappear from some localities

CONCLUSION

- VL Remains endemic in Baringo County
- High VL in most of the villages in the Tiaty Sub County
- Affects young children mainly males than females at the age <15 years
- Baringo County has favorable temperatures (32, 31 and 30 degrees registered 2016/2017 and 2018) conditions for the sand fly for VL survival, development and the activity

RECOMMENDATION

County Goverment of Baringo:

- Need to strengthen the diagnosis method to enhance a true results of VL
- Standardize tool for recording data to enhance the quality of data of patients
- Train/retrain their staff in recording of the patients details
- The County Goverment of Baringo should intensify the training of the community on the appropriate leshmaniases preventive practices and sand fly behavior
- Role of climate change in the transmission of VL should be ivestigated further
- The County Goverment of Baringo make use of one health approach in disease suerveillance and reporting